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EXAMINER

FERNANDEZ, SUSAN EMILY

ART UNIT

PAPER NUMBER

1651

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/626,316

Applicant(s)

SALINAS ET AL.

Examiner

SUSAN E. FERNANDEZ

Art Unit

1651

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-29, 33-35, 39 and 40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-29, 33-35, 39 and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 19, 2007, has been entered.

Claims 1-20, 30-32, 36-38 are cancelled. Claims 21-29, 33-35, 39, and 40 are pending and examined on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Since the microorganisms “Tr 115” and “Tr 116” are recited in claim 23, it is essential to the invention recited in that claim. It must therefore be obtainable by a repeatable method set forth in the specification or otherwise be readily available to the public. If the microorganism is not so obtainable or available, the requirements of 35 U.S.C. § 112 may be satisfied by a deposit of the microorganism. The specification does not disclose a repeatable process to obtain the

microorganism and it is not apparent if the microorganism is readily available to the public.

If a deposit is made under the terms of the Budapest Treaty, then an affidavit or declaration by applicants, or a statement by an attorney of record over his or her signature and registration number, stating that the specific strain will be irrevocably and without restriction or condition released to the public upon the issuance of a patent, would satisfy the deposit requirement made herein.

If the deposit has not been made under the Budapest Treaty, then in order to certify that the deposit meets the criteria set forth in 37 C.F.R. §§ 1.801-1.809, applicants may provide assurance of compliance by an affidavit or declaration, or by a statement by an attorney of record over his or her signature and registration number, showing that:

- (a) during the pendency of this application, access to the invention will be afforded to the Commissioner upon request;
- (b) all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;
- (c) the deposit will be maintained in a public depository for a period of 30 years or 5 years after the last request or for the effective life of the patent, whichever is longer; and
- (d) the deposit will be replaced if it should ever become inviable.

Applicant is directed to 37 CFR § 1.807(b), which states:

(b) A viability statement for each deposit of a biological material defined in paragraph (a) of this section not made under the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure must be filed in the application and must contain:

- (1) The name and address of the depository;
- (2) The name and address of the depositor;
- (3) The date of deposit;
- (4) The identity of the deposit and the accession number given by the depository;
- (5) The date of the viability test;

- (6) The procedures used to obtain a sample if the test is not done by the depository; and
- (7) A statement that the deposit is capable of reproduction.

Applicant is also directed to 37 CFR § 1.809(d) which states:

(d) For each deposit made pursuant to these regulations, the specification shall contain:

- (1) The accession number for the deposit;
- (2) The date of the deposit;
- (3) A description of the deposited biological material sufficient to specifically identify it and to permit examination; and
- (4) The name and address of the depository.

It is noted that claim 23 also recites specific organism "T 22" (or referred to as KRL-AG 2 or Rifai). While this raises an issue with respect to enablement under 35 U.S.C. § 112, first paragraph, it appears that the microorganisms are publicly available without restriction. See http://www.epa.gov/opbtpd1/biopesticides/ingredients/factsheets/factsheet_119202.htm. The microorganisms are therefore considered to be publicly available, unless applicant indicates otherwise. Should applicant become aware of any information to the contrary during the prosecution of this case, applicant must disclose such information to the office.

Claims 21-24, 27-29, and 33-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, the claims generically recite compositions comprising fungi selected from any and all *Trichoderma* species, or methods of using or making said compositions. However, the specification does not contain an adequate description for the entire scope of this limitation.

MPEP § 2163 provides that:

The written description for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice ..., reduction to drawings ..., or by disclosure of relevant identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus (Citation omitted.)

In the instant case, the recitation of any *Trichoderma* species generically encompasses any and all *Trichoderma* species. However, the only *Trichoderma* species described in the disclosure are *T. harzianum*, *T. viridae*, *T. polysporum*, *T. longibratum*, *T. koningii*, *T. harziano* and species identified as T 22 (KRL-AG 2 or Rifai), Tr 115, and Tr 116. A holding of lack of written description over the recitation of any and all *Trichoderma* species is clearly required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 is indefinite since it is unclear what would be considered “variations” of the species recited. The “variations” of the recited species could even be considered any other *Trichoderma* species. Additionally, the recitation “...the two or more *Trichoderma* species **may be** identified by strain names **such as...**” (emphasis added) renders the claim indefinite since “may be” and “such as” are exemplary claim language which lead to confusion over the intended

scope of the claim. The metes and bounds of the claim are unclear since it is not clear whether the two or more *Trichoderma* species need to be identified by the strain names listed in the claim. Thus, prior art which teaches a composition comprising two or more *Trichoderma* species selected from among the species listed in claim 23, and variations of these (any *Trichoderma* species), obtained in laboratory can anticipate this claim even if the prior art does not teach any of the listed strains.

Claim 29 is confusing since it is unclear what is defined by a "cicatrizing paint." Additionally, the recitation "may have color added" renders the claim indefinite since it is unclear whether added color is a required limitation of the claim. The metes and bounds of the claim are unclear.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21-23 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by McCabe et al. (US 4,828,600).

McCabe et al. discloses a fungal inoculant that may comprise a mixture of *Trichoderma hamatum* and *Trichoderma harzianum* (column 2, lines 38-42) and that the strains included in this mixture were “isolated natively from the field” (column 2, lines 43-44). See also column 5, lines 46-50. Thus, claims 21 and 22 under examination are anticipated by McCabe et al. Note further that *T. hamatum* can be considered a “variation” of other *Trichoderma* species such as *T. viridae*, *T. polysporum*, *T. longibratum*, and *T. koningii*, since *T. hamatum* is a species of the same genus as the fungi listed above. Therefore, McCabe et al. anticipates instant claim 23. The McCabe fungal inoculant is a fungicidal composition (column 3, lines 6-14) and may include a carrier (column 3, lines 34-35). Furthermore, the inoculant may be inserted into the furrows into which corn is planted (thus applied to soil) or coated directly on corn seeds. See column 3, lines 34-39. Thus, instant claim 35 (since corn seeds are food) is taught by the reference.

Claims 21-23 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Paau et al. (US 5,194,258) in light of Hermosa et al. (Applied and Environmental Microbiology, 2000, 66(5): 1890-1898) and the ATCC catalog.

Paau et al. discloses a method of protecting crop plants from fungal plant disease wherein a culture of biocontrol fungus comprising a mixture thereof of *Trichoderma* and *Gliocladium virens* is used. See abstract and claim 1 (particularly part (a)). *Gliocladium virens* is also known as *Trichoderma virens* (Hermosa et al., page 1890, first column, last paragraph). Moreover, in the discussion of *Trichoderma* strains used as biocontrol fungus (column 6, lines 64-66), the strains specified are under the ATCC numbers 24274 and 32247, and are strains of *Trichoderma harzianum* (“ATCC Number: 24274” and “ATCC Number: 32247”,

<http://www.atcc.org/common/catalog/numSearch/numResults.cfm>, accessed February 22, 2006).

Thus, Paau et al. teaches a mixture of at least two different *Trichoderma* species and in turn anticipates instant claims 21, 22, 35, and 36. Note further that *T. virens* can be considered a “variation” of other *Trichoderma* species such as *T. viridae*, *T. polysporum*, *T. longibratum*, and *T. koningii*, since *T. virens* is a species of the same genus as the fungi listed above. Therefore, Paau et al. anticipates instant claim 23.

Since the biocontrol fungus can be applied to seeds which are considered food, Paau et al. also anticipates instant claim 35.

Claims 21-23, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Richard (US 4,678,669).

Richard discloses a method for controlling soil-borne pathogens in plants wherein plants are treating with a mixture comprising a viable culture of *Trichoderma*, such as *Trichoderma viride* and *Trichoderma polysporum* (claims 1 and 2). Note that any plant can be considered food. Thus, instant claims 21-23, and 35 are anticipated by the reference.

Claims 21-24, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Reinbergen (WO 97/31879).

Reinbergen discloses a liquid composition comprising a microbial spore or culture preparation and a solution having a colloidal nature (claim 8) wherein the microbial spore or culture preparation is selected from a group consisting of spores of cultures from *Trichoderma* and mixtures thereof (claim 10). Thus, multiple *Trichoderma* species may be included in the

composition, thus anticipating claims 21 and 22 under examination. Furthermore, the *Trichoderma* species is selected from a group consisting of *T. harzianum*, *T. polysporum*, *T. konigii*, *T. viride*, and mixtures thereof (claim 12). Note that *T. viride* is considered an alternative spelling of *T. viridae*. Thus, Reinbergen clearly anticipates instant claims 23 and 24. Furthermore, the Reinbergen invention can be used for food products (page 5, lines 21-23), thus teaching the limitations of instant claim 35.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 21-23 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCabe et al. in view of Harman (Plant Disease, 2000, 84(4): 377-393).

As discussed above, McCabe et al. anticipates claims 21-23, and 35. However, McCabe et al. does not expressly disclose that the biological inoculant comprises *Trichoderma* species wherein the species are identified as T 22 (KRL-AG 2 or Rifai), Tr 115, or Tr 116.

Harman discloses the *T. harzianum* strain T-22 organism, which is also known as KRL-AG2 (page 377, second column, second paragraph). This biocontrol agent controls the growth of fungi, thereby serving as a suitable substitute for other fungicides and as an agent for plant growth (page 385, first column and Figures 9 and 10).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have substituted the *T. harzianum* strain used in the McCabe invention with the *T. harzianum* strain disclosed by Harman. One of ordinary skill in the art would have been motivated to do this since *T. harzianum* strain T-22 is effective against fungi and improves plant growth, thus sharing properties with the *T. harzianum* strain of the McCabe invention. Moreover, the strains are members of the same species, thus sharing other properties. One of ordinary skill would have reasonably expected that the substitution would have been suitable as a component in a biological inoculant for improving plant growth. A holding of obviousness is clearly required.

Claims 21-23 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paau et al., Hermosa et al., and the ATCC catalog in view of Harman.

As discussed above, Paau et al. in light of Hermosa et al. and the ATCC catalog anticipates claims 21-23, and 35. However, the references do not expressly disclose that

Trichoderma species present in the Paau composition are identified as T 22 (KRL-AG 2 or Rifai), Tr 115, or Tr 116.

Harman discloses the *T. harziaum* strain T-22 organism, which is also known as KRL-AG2 (page 377, second column, second paragraph). This biocontrol agent controls the growth of fungi, thereby serving as a suitable substitute for other fungicide and as an agent for plant growth (page 385, first column and Figures 9 and 10).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have substituted the *T. harziaum* strain used in the Paau invention with the *T. harziaum* strain disclosed by Harman. One of ordinary skill in the art would have been motivated to do this since *T. harziaum* strain T-22 is effective against fungi and serves as a biocontrol agent, thus sharing properties with the *T. harziaum* strain of the Paau invention. Moreover, the strains are members of the same species, thus sharing other properties. One of ordinary skill would have reasonably expected that the substitution would have been suitable as a component in a composition for protecting crop plants from fungal damage.

Paau et al. also differs from the claims in that Paau et al. does not expressly disclose the use of the “volley technique” or specific types of equipment used in applying the biocontrol composition to plants/seeds/soil. Further still, Paau et al. does not teach the applied dose recited in claim 34 under examination.

At the time the invention was made, it would have been obvious to have applied the Paau composition to plants and seeds using various techniques, including the “volley technique.” One of ordinary skill in the art would have been motivated to do this since Paau et al. indicates that the composition can be sprayed on the plant seed, soil, or plant (column 5, lines 8-10), and it is

clear that spraying can be performed with various types of machines. Thus, instant claim 33 is rendered obvious. Moreover, the selection of suitable doses of the biocontrol composition would have a matter of routine experimentation on the part of the artisan of ordinary skill in the art. Thus, instant claim 34 is rendered obvious.

A holding of obviousness is clearly required.

Claims 21-23, 29, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCabe et al. or Paau et al. (Hermosa et al. & ATCC catalog) or Richard in view of Howell et al. (Journal of Cotton Science, 1997, 1: 15-20).

As discussed above, McCabe et al., Paau et al. (Hermosa et al. & ATCC catalog), and Richard each anticipate claims 21-23, and 35. However, these references do not expressly disclose that the compositions of these references include a latex base.

Howell et al. discloses the treatment of seeds with a coating of latex sticker and a *Trichoderma virens* preparation (page 17, first column, first paragraph), along with metalaxyl. Thus, the treatment layers on the seeds are considered a composition comprising *T. virens* and a latex base. It was found that such a treatment was effective in acting as a fungicide (abstract).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have included latex in the compositions disclosed by McCabe et al., Paau et al. (Hermosa et al. & ATCC catalog), and Richard. One of ordinary skill in the art would have been motivated to do this since one of ordinary skill in the art would have recognized the suitability of including latex in a seed coating. Moreover, latex included in the McCabe, Paau, and Richard

compositions would not have inhibited the antifungal activity of the *Trichoderma* species present in said compositions. A holding of obviousness is clearly required.

Claims 21-24 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reinbergen in view of Harman.

As discussed above, Reinbergen anticipates claims 21-24, and 35. However, Reinbergen does not expressly disclose that the *Trichoderma* species are identified as T 22 (KRL-AG 2 or Rifai), Tr 115, or Tr 116.

Harman discloses the *T. harzianum* strain T-22 organism, which is also known as KRL-AG2 (page 377, second column, second paragraph). This biocontrol agent controls the growth of fungi, thereby serving as a suitable substitute for other fungicide and as an agent for plant growth (page 385, first column and Figures 9 and 10).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have used the *T. harzianum* strain T-22 disclosed by Harman in the Reinbergen composition. One of ordinary skill in the art would have been motivated to do this since *T. harzianum* strain T-22 is effective against fungi and serves as a biocontrol agent, which are properties of the Reinbergen compositions. Moreover, the person of ordinary skill in the art would have recognized the suitability of using any strain of the *T. harzianum* species in the Reinbergen composition.

Reinbergen also differs from the claims in that Reinbergen does not expressly disclose the use of the "volley technique" or specific types of equipment used in applying the biocontrol

composition to plants/seeds/soil. Further still, Reinbergen does not teach the applied dose recited in claim 34 under examination.

At the time the invention was made, it would have been obvious to have applied the Reinbergen composition to plants and seeds using various techniques, including the “volley technique.” One of ordinary skill in the art would have been motivated to do this since Reinbergen indicates that the composition (marketed as CompanionTM and Companion 2TM) can be sprayed on plots (page 14, lines 7-9 and lines 19-20), and it is clear that spraying can be performed with various types of machines. Thus, instant claim 33 is rendered obvious. Moreover, the selection of suitable doses of the Reinbergen composition would have been a matter of routine experimentation on the part of the artisan of ordinary skill in the art. Thus, instant claim 34 is rendered obvious.

A holding of obviousness is clearly required.

Claims 21-26, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reinbergen in view of Gromovych et al. (Proceedings of 1999 Annual International Research Conference on Methyl Bromide Alternatives and Emissions Reductions, <http://www.epa.gov/ozone/mbr/airc/1999/>, last updated June 6, 2002).

As discussed above, Reinbergen anticipates claims 21-24, and 35. However, Reinbergen does not expressly disclose that the *Trichoderma longibrachiatum* is included in the mixture of *Trichoderma* species included in the Reinbergen liquid composition, wherein the Reinbergen liquid composition already teaches a mixture comprising *T. viridae*, and *T. harzianum*.

Gromovykh et al. discloses that five of the most promising isolates against certain pathogenic fungi were identified. These five strains corresponded to the species *T. viride* (*T. viridae*), *T. harzianum*, and *T. longibrachiatum*, among others. See first page, "Materials and methods." All of these tested strains demonstrated antagonistic activity against a particular pathogenic fungus species (second page, "Results and discussion").

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have included *T. longibrachiatum* as one of the *Trichoderma* species in the mixture included in the Reinbergen liquid composition. One of ordinary skill in the art would have been motivated to do this because of the antifungal properties exhibited by *T. longibrachiatum*, wherein said antifungal properties are the properties desired for the Reinbergen liquid composition. Additionally, the selection of particular proportions of the different *Trichoderma* species present in the Reinbergen composition would have been a routine experimentation on the part of the artisan of ordinary skill in the art. Therefore, claims 25 and 26 are rendered obvious by the references. A holding of obviousness is clearly required.

Claims 21-28, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reinbergen and Gromovykh et al. as applied to claims 21-26, and 35 above, and further in view of Panizzi et al.

As discussed above, Reinbergen and Gromovykh et al. render claims 21-26, and 35 obvious. However, these references do not expressly disclose that the *Trichoderma* composition further comprises a vegetal extract of bacteriostatic and/or bactericidal nature, or that this vegetal extract is a *Rubus* sp. hydro-alcoholic extract.

Panizzi et al. discloses that a crude methanolic extract of *Rubus ulmifolius* possesses “high antimicrobial properties on bacteria and fungi” (page 165, first column, last paragraph).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have included an alcoholic extract of *R. ulmifolius* in the Reinbergen *Trichoderma* composition. One of ordinary skill in the art would have been motivated to do this since it would have further increased the antifungal activity of the *Trichoderma* composition, acting on bacteria or fungi which are not acted on by the *Trichoderma* species included in the composition. A holding of obviousness is clearly required.

Claims 21-24, 29, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reinbergen in view of Howell et al.

As discussed above, Reinbergen anticipates claims 21-24, and 35. However, Reinbergen does not expressly disclose that the *Trichoderma* composition includes a latex base.

Howell et al. discloses the treatment of seeds with a coating of latex sticker and a *Trichoderma virens* preparation (page 17, first column, first paragraph), along with metalaxyl. Thus, the treatment layers on the seeds are considered a composition comprising *T. virens* and a latex base. It was found that such a treatment was effective in acting as a fungicide (abstract).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have included latex in the *Trichoderma* composition disclosed by Reinbergen. One of ordinary skill in the art would have been motivated to do this since one of ordinary skill in the art would have recognized the suitability of including latex in a seed coating. Moreover, latex

included in the composition would not have inhibited the antifungal activity of the *Trichoderma* species present in said composition. A holding of obviousness is clearly required.

Claims 21-26, 35, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reinbergen and Gromovych et al as applied to claims 21-26, and 35 above, and further in view of Toet et al. and Yeoh et al.

As discussed above, Reinbergen and Gromovych et al render claims 21-26, and 35 obvious. However, Reinbergen does not expressly disclose steps for preparing the *Trichoderma* composition, wherein trays are sowed with *Trichoderma* species in the form of reproductive original units, and then harvested by mechanical means.

Toet et al. discloses a method for producing *Trichoderma harzianum* "...in a form suitable for adding directly to soil to protect plants from pathogenic fungi..." (claim 1). This method comprises inoculating (sowing) trays containing culture medium with *Trichoderma harzianum* spores. The culture is allowed to grow, and the incubated product is dried. See claim 1. Note that a full-scale plant can be constructed in order to perform this method (Example III at columns 3 and 4), wherein the trays containing the inoculated product can be emptied onto drying racks (column 4, lines 3-5). Thus, the resulting inoculated product is harvested by mechanical means.

Yeoh et al. discloses growing strains of *Trichoderma* fungi in a culture medium comprising cassava-root extract, which is a vegetal extract. See abstract.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have prepared the Reinbergen *Trichoderma* composition by the methods

disclosed by Toet et al, wherein trays containing culture medium are inoculated with spores of all *Trichoderma* species included in the composition, and the biomass is harvested by mechanical means. Moreover, it would have been obvious to have included vegetal extracts in the culture medium. One of ordinary skill in the art would have been motivated to have used the methods disclosed by Toet et al. since these had been shown to be successful in obtaining one of the species included in the Reinbergen composition, *Trichoderma harzianum*, and the *Trichoderma* species is obtained in a form suitable for protecting plants from pathogenic fungi, a desired property. Furthermore, one of ordinary skill in the art would have been motivated to have used vegetal extracts, such as root extracts, in the culture medium since it would have permitted *Trichoderma* growth, and was recognized as being suitable for inclusion in *Trichoderma* culture medium by Yeoh et al. Moreover, since the culture medium used in Toet et al. comprises of spent grain, crushed maize cobs, and bran, one of ordinary skill in the art would have expected that the extracts of these products would have contained the nutrients needed for *Trichoderma* growth. Thus, claim 39 under examination is rendered obvious. Additionally, it would have been a matter of routine experimentation to have varied the quantities of each species present in the prepared composition, including the quantities recited in claim 40 under examination. A holding of obviousness is clearly required.

Response to Arguments

Applicant's arguments filed July 19, 2007, have been fully considered but they are not persuasive. With respect to Tr 115 and Tr 116, it is noted that though the applicant has provided

sources asserted to sell these microorganisms, no evidence is provided to demonstrate this. Thus, the enablement rejection must be maintained.

With respect to the written description rejection, the applicant asserts that there is no showing that one skilled in the art would not recognize that the method described in the instant application can be used with any combination of two or more species of *Trichoderma*. However, the instant application points out that "The antagonist activity for space and nutrients facing fitopathogenic fungus, including the facing of *Trichoderma* species, is widely documented in research centers both in Europe and in U.S.A." (page 1, fourth paragraph). Thus it is clear that not all combinations of *Trichoderma* species can coexist in a single composition. Therefore, the written description rejection must be maintained.

Claim 23 is still considered indefinite since it is unclear what variations are encompassed by the claim. Therefore, the metes and bounds of the claim are unclear.

Claim 29 is still considered indefinite since it is not clear that "cicatrizing paint" can be considered "paint capable of wound healing." It could also be considered paint for creating cicatrices. The specification does not clearly define the term, nor has the applicant provided evidence to show that "cicatrizing paint" is defined expressly in the literature as "paint capable of wound healing." Thus, the rejection must be maintained.

With respect to the McCabe reference, the applicant asserts that nothing in McCabe suggests that once the two or more species of *Trichoderma* propagate, that they will stimulate the other to excrete biocide without suffering any harm from the excrement and resulting in superior lifecycle and increased secretion. However, these limitations are not in the pending claims. Although the claims are interpreted in light of the specification, limitations from the specification

are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, the applicant asserts that claim 35 is not anticipated. However, the McCabe composition may be applied to corn seeds, and corn seeds are considered food. Thus, the rejections over McCabe et al. must be maintained.

With respect to the Paau reference, the applicant has asserted that the Paau does not teach a combination of live *Trichoderma* organisms. However, Paau teaches that a cultures are used, thus the cultures are considered live. The rejections over Paau must therefore be maintained.

With respect to Richard, the viable culture of mixtures of *Trichoderma* species is considered a composition, thus the claims are anticipated. Furthermore, the plant to which the viable culture is applied to is considered food. Therefore, claim 35 is indeed anticipated by Richard.

With respect to Reinbergen, the claims are indeed anticipated since microbial spores and/or colonies are considered "live." Furthermore, claim 35 is indeed anticipated since the Reinbergen invention can be used for food products (page 5, lines 21-23). Therefore, the rejections over Reinbergen must be maintained.

Regarding the arguments concerning Reinbergen and Gromovukh in view of Panizzi, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUSAN E. FERNANDEZ whose telephone number is (571)272-3444. The examiner can normally be reached on Mon-Fri 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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